

In the Claims:

1-25. (canceled)

26. (currently amended) A method of measuring on-resistance of an output buffer of an integrated circuit, the output buffer ~~for driving having an output coupled to~~ a functional output ~~terminal pad~~ of the integrated circuit ~~during functional operation~~, comprising ~~the steps of~~:

A. isolating the functional output ~~terminal pad~~ from external connections;

B. connecting a first external test terminal to the output of the output buffer;

C. causing the output buffer to drive its output to a first unloaded voltage level;

D. measuring the first unloaded voltage level at the first test terminal responsive to the causing step;

E. connecting a load to the output of the output buffer via a second test terminal;

F. after the step of connecting a load, measuring a first loaded voltage level at the first test terminal;

G. after the step of connecting a load, measuring a first current flow through the load; and

H. determining a first on-resistance of the output buffer from the first measured current flow and the measured first unloaded and first loaded voltage levels.

27. (currently amended) The method of claim 26, ~~wherein in~~ which the measuring steps ~~are performed~~ include using a voltage measurement circuit having a high input impedance, so that the current flow at the first test terminal during the measuring steps is minimal.

28. (currently amended)The method of claim 26,~~—further~~
~~comprising~~ including:

A. disconnecting the load from the output of the output buffer via the second test terminal;

B. then causing the output buffer to drive its output to a second unloaded voltage level;

C. measuring the second unloaded voltage level at the first test terminal responsive to the causing step;

D. connecting a load to the output of the output buffer via the second test terminal;

E. after the step of connecting a load, measuring a second loaded voltage level at the first test terminal;

F. after the step of connecting a load, measuring a second current flow through the load; and

G. determining a second on-resistance of the output buffer from the second measured current flow and the measured second unloaded and second loaded voltage levels.

29-34. (canceled)